

1           1.    A method comprising:  
2                    exposing a contact plug fill to an etching  
3    solution; and  
4                    determining if the region under the contact plug  
5    fill is etched away.

1           2.    The method of claim 1 including exposing the  
2    contact plug fill to a basic solution.

1           3.    The method of claim 1 including exposing the  
2    contact plug fill to a solution that preferably etches  
3    along the <111> crystallographic orientation

1           4.    The method of claim 1 including using an etching  
2    solution that etches a characteristic etch pattern under  
3    the contact plug fill if the contact plug fill is  
4    defective.

1           5.    The method of claim 1 including exposing the  
2    surface of said contact plug fill to an electrical charge.

1           6.    The method of claim 5 including exposing said  
2    surface to charge using voltage contrast-based defect  
3    inspection.

1        7.    The method of claim 5 including applying a  
2    contact to said contact plug fill to enable electrical  
3    testing of the contact plug fill.

1        8.    The method of claim 5 including determining which  
2    contact plug fill dissipates surface charge and which  
3    contact plug fill does not dissipate surface charge.

1        9.    A method comprising:  
2                forming a conductive material in an aperture in a  
3    dielectric layer; and  
4                applying an etching solution to said conductive  
5    material to determine whether the conductive material is  
6    defective.

1        10.   The method of claim 9 including exposing a  
2    contact plug fill to an etching solution.

1        11.   The method of claim 9 including applying an  
2    etching solution which characteristically etches underneath  
3    the conductive material if the conductive material is  
4    defective.

1        12.   The method of claim 9 including applying a basic  
2    solution to said conductive material.

1        13. The method of claim 9 wherein applying an etching  
2 solution includes exposing the conductive material to a  
3 solution that preferentially etches along the <111>  
4 crystallographic direction.

1        14. The method of claim 12 including applying an  
2 etching solution that etches a V-shaped trench under a  
3 defective conductive material.

1        15. The method of claim 9 including exposing the  
2 surface of said conductive material to an electric charge.

1        16. The method of claim 15 including using voltage  
2 contrast-based defect inspection.

1        17. The method of claim 9 including applying a  
2 contact to said conductive material.

1        18. The method of claim 17 including using electrical  
2 testing to determine if said conductive material is  
3 defective.

1        19. The method of claim 15 including using a  
2 secondary electron image to determine if said conductive  
3 material is defective.

1           20. A method comprising:  
2               forming a contact plug fill in a dielectric  
3 layer;  
4               applying a basic solution to said contact plug  
5 fill; and  
6               determining whether the region underneath the  
7 contact plug fill is etched by said basic solution.

1           21. The method of claim 20 including applying a basic  
2 solution which characteristically etches underneath the  
3 contact plug fill if the fill is defective.

1           22. The method of claim 20 wherein applying a basic  
2 solution includes exposing the contact plug fill to a  
3 solution that preferentially etches along the <111>  
4 crystallographic direction.

1           23. The method of claim 21 including applying a basic  
2 solution that etches a V-shaped trench under a defective  
3 fill.

1           24. The method of claim 20 including exposing the  
2 contact plug fill to an electric charge.

1           25. The method of claim 24 including using voltage  
2 contrast-based defect inspection.

1           26. The method of claim 20 including applying a  
2 contact to said contact plug fill.

1           27. The method of claim 21 including using electrical  
2 testing to determine if said fill is defective.

1           28. The method of claim 24 including using a  
2 secondary electron image to determine if said fill is  
3 defective.